



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

*ml*

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,313	02/23/2004	Jack Steenstra	030464B2	9669
23696	7590	05/10/2007	EXAMINER	
QUALCOMM INCORPORATED 5775 MOREHOUSE DR. SAN DIEGO, CA 92121			PARTHASARATHY, PRAMILA	
ART UNIT		PAPER NUMBER		
2136				
NOTIFICATION DATE		DELIVERY MODE		
05/10/2007		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

us-docketing@qualcomm.com  
kascanla@qualcomm.com  
nanm@qualcomm.com

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/785,313	STEENSTRA ET AL.
	Examiner	Art Unit
	Pramila Parthasarathy	2136

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 21 March 2005.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-42 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-42 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
     Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
     Paper No(s)/Mail Date. \_\_\_\_\_

5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_

**DETAILED ACTION**

1. This action is in response to the communication filed on 07/02/2004. No preliminary amendments were filed. Claims 1 – 42 are currently pending.

***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1 – 42 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 – 45 of copending Application No. 10/873,656. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant case, all elements of claims 1 – 42 correspond to the claims of 1 – 45 of the

copending application claims, except in the instant claims the cryptographic key is a private key corresponding to a public key and the cryptographic key is a symmetric key, is referred in the copending application claims as a cryptographic key. It would have been obvious to one having ordinary skill in the art to recognize that a cryptographic key can be a private-public key pair or a symmetric key.

Claims of the instant application are anticipated by copending application claims in that the patent claims contains all the limitations of the instant application. Claims of the instant application therefore is not patentably distinct from the copending application claims and as such are unpatentable for obvious-type double patenting (*In re Goodman* (CAFC) 29 USPQ2d 2010 (12/3/1993).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

3. Claims 1 – 42 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 – 58 of copending Application No. 10/077,365. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant case, all elements of claims 1 – 42 correspond to the claims of 1 – 58 of the copending application claims, except in the instant claims a storage medium configured to store a cryptographic key; a processor coupled to the storage medium and configured to generate an access code using the cryptographic key; a converter coupled to the processor and configured to convert the access code

into sound waves encoded with the access code; and an audio output unit coupled to the converter and configured to output the sound waves encoded with the access code for authentication; a clock coupled to the processor and configured to generate a time element; and wherein the processor is configured to generate the access code using the cryptographic key and the time element, is referred in the copending application claims as a processor; a clock coupled to the processor configurable to generate a time element; a memory element to the processor configurable to store a private key and public key information; at least one actuator coupled to the processor; a signature generator coupled to the processor operable to generate a digital signature, the digital signature being a function of the private key and the time element; and an emitter coupled to the signal generator operable to emit the secure identifier, the secure identifier comprising the digital signature, time element, and public key information. It would have been obvious to one having ordinary skill in the art to recognize that a private-public key pair key is a cryptographic key.

Claims of the instant application are anticipated by copending application claims in that the patent claims contains all the limitations of the instant application. Claims of the instant application therefore is not patentably distinct from the copending application claims and as such are unpatentable for obvious-type double patenting (*In re Goodman* (CAFC) 29 USPQ2d 2010 (12/3/1993).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**4.** Claims 1 – 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Owens (U.S. Patent Number) 5,481,611 in view of Kaiser et al. (U.S. Patent Number 6,188,717).

**5.** Regarding Claims 1, 9, 10, 18, 25, 26 and 28, Owens teaches a storage medium configured to store a cryptographic key and a look up table (LUT) (Owens Summary and Column 9 lines 1 – 9);

a first processor coupled to the storage medium and configured to generate an access code using the cryptographic key (Owens Summary and Column 9 lines 1 – 40);

a converter coupled to the processor and configured to convert the access code into sound waves encoded with the access code (Owens Summary and Column 9 lines 1 – 40); and

an audio output unit coupled to the converter and configured to output the sound waves encoded with the access code for authentication (Owens Summary and Column 9 lines 1 – 40);

Owens does not explicitly disclose "a binary shift keying (BPSK) module configured to generate multiple parallel BPSK symbols" and "a second processor coupled to the BPSK module and the storage medium, configured to convert the BPSK symbols into the multiple tones using the LUT". However, Kaiser discloses a binary shift keying (BPSK) module configured to generate multiple parallel BPSK symbols; and a second processor coupled to the BPSK module and the storage medium, configured to convert the BPSK symbols into the multiple tones using the LUT (Kaiser Summary and Column 5 lines 30 – 57).

Motivation to combine the invention of Owens with Kaiser's teachings comes from the need for preventing unauthorized access by using BPSK to generate multiple parallel BPSK symbols and to further convert the parallel BPSK symbols into the multiple tones. Owens themselves provide a discussion of the need for preventing unauthorized access but are silent as to the specific details

of the technical manipulation involved, see Owens Summary. It would have been obvious to one of ordinary skill in the art to combining Owens with Kaiser because security and preventing unauthorized access is needed and Kaiser provides some details of how to prevent unauthorized access.

6. Regarding Claims 29, 34 and 41, Owens teaches an audio output unit coupled to the converter and configured to recover multiple tones with an access code (Owens Summary and Column 9 lines 1 – 40);

a converter coupled to the processor and configured to recover the access code into multiple tones encoded with the access code (Owens Summary and Column 9 lines 1 – 40).

Owens does not explicitly disclose "a down-converter configured to demodulate the multiple tones into IFFT symbols; a fast fourier transform (FFT) module configured to generate multiple parallel BPSK symbols; a BPSK module coupled to the processor, configured to convert the BPSK symbols into an encoded interleaved bit stream of the access code; a de-interleaver coupled to the BPSK module, configured to de-interleave the encoded interleaved bit stream" and "a decoding module coupled to the de-interleaver, configured to recover the access code from the encoded de-interleaved bit stream". However, Kaiser discloses a down-converter configured to demodulate the multiple tones into IFFT symbols; a fast fourier transform (FFT) module configured to generate multiple parallel BPSK symbols; a BPSK module coupled to the processor, configured to convert the BPSK symbols into an encoded interleaved bit stream

of the access code; a de-interleaver coupled to the BPSK module, configured to de-interleave the encoded interleaved bit stream and a decoding module coupled to the de-interleaver, configured to recover the access code from the encoded de-interleaved bit stream (Kaiser Summary; Column 5 lines 30 – 57 and Column 7 lines 4 – 38).

Motivation to combine the invention of Owens with Kaiser's teachings comes from the need for preventing unauthorized access by using BPSK to generate multiple parallel BPSK symbols and to further convert the parallel BPSK symbols into the multiple tones. Owens themselves provide a discussion of the need for preventing unauthorized access but are silent as to the specific details of the technical manipulation involved, see Owens Summary. It would have been obvious to one of ordinary skill in the art to combining Owens with Kaiser because security and preventing unauthorized access is needed and Kaiser provides some details of how to prevent unauthorized access.

7. Claims 2, 11 – 13, 19 – 20 and 27 are rejected applied as above and Owens and Kaiser combination teaches wherein either one of the first or second processor is further configured to repeat the BPSK symbols a selected number of time; and wherein the second processor converts repeated BPSK symbols into the multiple tones (Owens Column 3 lines 61 – 67).

Art Unit: 2136

8. Claims 3, 14, 21, 32 and 40 are rejected applied as above and Owens and Kaiser combination teaches wherein a clock coupled to the processor and configured to generate a time element; and wherein the processor is configured to generate the access code using the cryptographic key and the time element (Column 3 lines 31 – 50 and Column 9 lines 1 – 40).

9. Claims 4, 15 and 22 are rejected applied as above and Owens and Kaiser combination teaches an actuator coupled to the first processor, configured to receive a user command; and wherein the first processor is configured to generate the access code when the user command is received (Column 3 lines 31 – 50 and Column 9 lines 1 – 55).

10. Claim 5 is rejected applied as above and Owens and Kaiser combination teaches a housing element configured to encase the storage medium, the first processor, the converter and the audio output unit and an opening through the housing element (Column 9 lines 1 – 55).

11. Claims 6, 16 and 23 are rejected applied as above and Owens and Kaiser combination teaches wherein an amplifier coupled to the converter, configured to amplify the multiple tones and wherein the audio output unit is configured to output the amplified multiple tones (Column 9 lines 1 – 29).

Art Unit: 2136

**12.** Claim 7 is rejected applied as above and Owens and Kaiser combination teaches a display module coupled to the first processor, configured to display the access code (Column 3 lines 31 – 50).

**13.** Claims 8, 17, 24, 31, 39 and 42 are rejected applied as above and Owens and Kaiser combination teaches a user input unit configured to receive a personal identification number (PIN); wherein the converter is configured to convert the PIN into multiple tones encoded with the PIN; and wherein the audio output unit is further configured to output the multiple tones encoded with the PIN for authentication (Owens Column 9 line 61 – Column 10 line 11 and Kaiser Summary; Column 5 lines 30 – 57 and Column 7 lines 4 – 38).

**14.** Claims 30 and 38 are rejected applied as above and Owens and Kaiser combination teaches storage medium configured to store a cryptographic key (Owens Summary and Column 9 lines 1 – 9); and a processor coupled to the storage medium and the converter, configured to verify the access code using the cryptographic key and to grant access if the access code is verified (Owens Summary and Column 9 line 61 – Column 10 line 11).

**15.** Claims 33 and 35 – 37 are rejected applied as above and Owens and Kaiser combination teaches wherein the FFT module converts the multiple tones into repeated sets of BPSK symbols and generates a selected set of BPSK symbols; and wherein the BPSK module converts the selected set of BPSK

symbols (Kaiser Summary; Column 5 lines 30 – 57 and Column 7 lines 4 – 38).

16. Claims 31, 39 and 42 are rejected applied as above and Owens and Kaiser combination teaches wherein the verifier device stores a first password and the method further comprises: receiving a second password; wherein verifying the access code comprises verifying the access code if the first password corresponds to the second password (Column 9 lines 1 – Column 10 line 11).

### ***Conclusion***

17. Examiner's Note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Art Unit: 2136

**18.** The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO Form 892.

Applicant is urged to consider the references. However, the references should be evaluated by what they suggest to one versed in the art, rather than by their specific disclosure. If applicants are aware of any better prior art than those are cited, they are required to bring the prior art to the attention of the examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pramila Parthasarathy whose telephone number is 571-272-3866. The examiner can normally be reached on 8:00a.m. To 5:00p.m.. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 571-232-3795. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR only. For more information about the PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Pramila Parthasarathy  
May 05, 2007.

